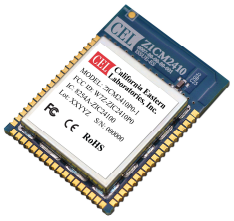
Bluetooth v5.0 + NFC Wireless Microcontroller

Industrial Grade, Low Power and Optimized RF providing Best Range and Performance for Harsh Environments

Built around the QN9090 from NXP, the CBT250 combines an ARM® Cortex®-M4 microcontroller with a high-performance Bluetooth v5.0 radio to offer OEM developers the ultimate in design flexibility. With 640 kB of executable flash and 152 kB RAM, the CMP53x can host the end-user application. An optional 1 MB of additional flash offers integrated OTA FW support. Offering a wide variety of peripherals, the CBT250 can function as the core of a product design or interface to a host processor via a serial interface. Integrated NFC tag functionality offers the easiest, and most secure, method for pairing Bluetooth devices.



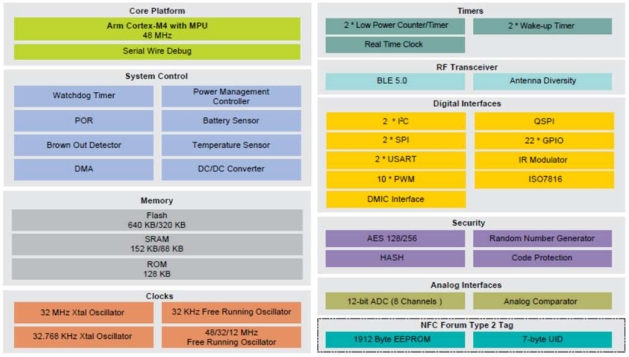
KEY FEATURES

- Ultra-Low Power ARM® Cortex®-M4
  - Deep Sleep Current – 350 nA
  - Rx Current – 4.3 mA
  - Tx Current (0 dBm) – 7.4 mA
  - Tx Current (10 dBm) – 20.3 mA
  - Integrated RTC
- BLE 5.0
  - Max Transmit Power: 11 dBm
  - 2 Mbit PHY
  - 8 Simultaneous Connections
- Memory Resources
  - 640 kB executable flash
  - 1 MB optional flash for OTA support
  - 152 kB RAM
- Superior RF Performance
  - Omnidirectional to eliminate dead zones
  - Maximum Transmit Efficiency
  - Maximize Range without sacrificing throughput
- Advanced Security Features
  - Random Number Generator
  - AES-128/256
  - SHA-1 and SHA-256 Accelerator
  - EFuse
- Integrated NFC Forum Type 2 Tag
- Complete Set of Integrated Peripherals
  - 2 ea I2C/SPI/USART
  - 1x QSPI
  - 10x PWM
  - 22x GPIO
  - Stereo Digital Microphone
  - 8 Ch, 12-bit ADC

SPECIFICATIONS

- Antenna Options
  - Integrated Omnidirectional PCB Trace
  - RF Pin for External
- Dimensions: 20x17 mm
- CBT250 and CMP53x share a common footprint
- Operating Voltage: 3.3V (+/- 0.3V)
- Operating Temperature: -40º to +105º C
- Certifications: FCC/IC/CE/RED Pending

BLOCK DIAGRAM



SOFTWARE DEVELOPMENT TOOLS

- Microsoft Azure RTOS Support
- AWS FreeRTOS Support
- MCUXpresso IDE
  - Eclipse Based – Maintained by NXP
  - Integrated Debugger
- GCC Toolchain
- GUI and Command Line ISP